CLAIMS

1. A method comprising:

 determining policy definitions for an autonomic computing system;

5 determining configuration relationships;

 monitoring applicable resources for status information;

 determining if the autonomic computing system is at a desired end state; and

 modifying resource states, by sending an instruction for the resource to

perform an available action, in response to determining the autonomic computing

10 system is not at the desired end state.

2. The method of claim 1, wherein the policy definitions can specify at least one

of:

 an association between a resource and any other set of resources; and

15 a desired state for a resource or set of resources.

3. The method of claim 2, wherein the association between a resource and any other set of resources comprise at least one of:

a start order among resources;

a stop order among resources;

5 a prioritization between resources;

a conditional activation of policies; and

a location limitation of resources.

4. The method of claim 1, further comprising:

10 receiving resource status information from available resources; and

continuing to determine if the autonomic computing system is at the desired end state and modifying the resource states, by sending an instruction for the resource to perform an available action, until the autonomic computing system has reached the desired end state.

15

5. The method of claim 1, wherein the determining policy definitions for an autonomic computing system comprises:

determining a user-defined system end state; and

determining a set of user-defined resource relationships.

20

6.   The method of claim 1, wherein the determining policy definitions for an autonomic computing system further comprises harvesting implicit relationships between resources through self discovery.

5   7.   The method of claim 1, wherein the determining policy definitions for an autonomic computing system further comprises determining underlying relationships among members of a resource group.

8.   The method according to claim 7, wherein the members of the resource

10   group are distributed within a heterogeneous cluster.

9.   A computer readable medium comprising computer instructions for performing the following:

determining policy definitions for an autonomic computing system;

determining configuration relationships;

5   monitoring applicable resources for status information;

determining if the autonomic computing system is at a desired end state; and

modifying resource states, by sending an instruction for a resource to perform an available action, in response to determining the autonomic computing system is not at the desired end state.

10

10.   The computer readable medium of claim 9, wherein the policy definitions can specify at least one of:

an association between a resource and any other set of resources; and

a desired end state for a resource or set of resources.

15

11. The computer readable medium of claim 10, wherein the association between a resource and any other set of resources comprise at least one of:

a start order among resources;

a stop order among resources;

5   a prioritization between resources;

a conditional activation of policies; and

a location limitation of resources.

12. The computer readable medium of claim 9, further comprising computer

10   instructions for performing the following:

receiving resource status information from available resources; and

continuing to determine if the autonomic computing system is at a desired end state and modifying the resource states, by sending an instruction for a resource to perform an available action, until the autonomic computing system has

15   reached a desired end state.

13. The computer readable medium of claim 9, wherein the determining policy definitions for an autonomic computing system comprises:

determining a user-defined system end state; and

20   determining a set of user-defined resource relationships.

14.   The computer readable medium of claim 9, wherein the determining policy definitions for an autonomic computing system further comprises harvesting implicit relationships between resources through self discovery.

5   15.   The computer readable medium of claim 9, wherein the determining policy definitions for an autonomic computing system further comprises determining underlying relationships among members of a resource group.

16.   The computer readable medium according to claim 15, wherein the members

10   of the resource group are distributed within a heterogeneous cluster.

17. An autonomic computing system resource manager comprising:

memory for storing at least one policy definition;

a resource monitor, communicatively coupled with at least one resource in an autonomic computing system and with the memory, for monitoring, and

5 communicating data with, the at least one resource;

a policy generator, communicatively coupled with the memory, and with the resource harvester, for providing in the memory a representation of a system-wide graph of available actions corresponding with the at least one resource in the autonomic computing system; and

10 an automation engine; communicatively coupled to the resource monitor and the memory, for communicating available actions to the at least one resource in order for the autonomic computing system to establish and maintain a desired end state.

15

18.   The autonomic computing system resource manager of claim 17, further

comprising:

a resource harvester, communicatively coupled with the at least one

resource, the resource monitor, and the policy generator, for harvesting implicit

5   relationships between resources in the autonomic computing system via self

discovery;

19.   The autonomic computing system resource manager of claim 17, wherein:

the policy generator further for specifying implicit relationships between

10   resources in the autonomic computing system.

20.   The autonomic computing system resource manager of claim 19, wherein

the policy generator further for specifying implicit relationships between resources

that are distributed within a heterogeneous cluster in the autonomic computing

15   system.

21.   The autonomic computing system resource manager of claim 17, wherein:

the policy generator for creating at least one policy definition specified at least

in part by a user of the autonomic computing system.

20

22.   The autonomic computing system resource manager of claim 17, wherein:

the policy generator for creating at least one policy definition determined at

least in part by autonomic computing system self discovery.

5

23.   An apparatus comprising:

a cluster resource manager, for determining policy definitions for an

autonomic computing system, determining a set of available actions, monitoring at

least one resource in the autonomic computing system for status information,

5   determining if the autonomic computing system is at a desired end state, and

modifying resource states of the at least one resource, by sending at least one

instruction for the at least one resource to perform an available action, in response

to determining the autonomic computing system is not at the desired end state; and

at least one network interface card, communicatively coupled with the cluster

10   resource manager and the at least one resource, for communicating information

between the cluster resource manager and the at least one resource in the

autonomic computing system.

24.   An autonomic computing system comprising:

at least one distributed resource; and

an autonomic computing system resource manager comprising:

memory for storing at least one policy definition;

5   a resource monitor, communicatively coupled with at least one resource in an autonomic computing system and with the memory, for monitoring, and communicating data with, the at least one resource;

a policy generator, communicatively coupled with the memory, and with the resource harvester, for providing in the memory a representation of a

10   system-wide graph of available actions corresponding with the at least one distributed resource in the autonomic computing system; and

an automation engine, communicatively coupled with the resource monitor and the memory, for communicating available actions to the at least one distributed resource in order for the autonomic computing system to establish and

15   maintain a desired end state.